



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,118	07/07/2000	Yan Liu	A-65351-2/DJB	7419

7590 04/21/2004

Flehr Hohbach Test Albritton & Herbert LLP  
Suite 3400  
4 Embarcadero Center  
San Francisco, CA 94111-4187

EXAMINER

LUDLOW, JAN M

ART UNIT PAPER NUMBER

1743

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/612,118

Applicant(s)

LIU ET AL

Examiner

Jan M. Ludlow

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 50, 51, 53-56, 58, 59, 61-63 and 65-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 54, 58, 66, 67, 70 and 71 is/are allowed.
- 6) ☒ Claim(s) 50, 51, 53, 55, 56, 59, 61-63, 65, 68 and 69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1743

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

2. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

3. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 68, 69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 16 of U.S. Patent No.

6225129. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the instant claims are encompassed by the patented claims.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

6. Determining the scope and contents of the prior art.
7. Ascertaining the differences between the prior art and the claims at issue.
8. Resolving the level of ordinary skill in the pertinent art.
9. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 1743

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103<sup>®</sup> and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 50-51, 53, 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dasgupta et al. ('204) in view of Sorensen et al.

12. Dasgupta teaches a method for generating an eluent prior to combination with a sample and passage through a chromatographic column, suppressor and conductivity detector (Fig. 1). The eluent is generated by electrolysis in an ion exchange device (fig 4) having a cation source reservoir 74, a permselective barrier 42, an aqueous feed 90 to a base generation chamber 82 and electrodes 54, 56. Ion exchange screens 38, 52 are provided, but ion exchange particles may be used (Col. 5, lines 25-30). Gas produced by electrolysis can be removed prior to use as an eluent (col. 9, lines 4-46). The device can be in the form of nested tubes (Figs. 8-9), with either the product or source channel in the interior or exterior (col. 10, lines 15-45). The device can be used with chromatographic systems, including in gradients (col. 10, lines 46-57), Figure 1.

13. Dasgupta fails to explicitly teach the claimed barrier thickness or volume ratio.

14. Sorensen teaches an improved ion exchange membrane for use in electrolytic cells. It is preferably .01 to 2 mm thick in sheet form (col. 9, line 49).

Art Unit: 1743

15. It would have been obvious to one of ordinary skill in the art to use the membrane of Sorensen in the invention of Dasgupta in order to provide enhanced cell performance as taught by Sorensen. It would have been obvious to use the thicker sheet to provide maximum exchange sites to speed ion transport across the barrier. It would have been further obvious to optimize the volume of the reservoir and chamber in order to optimize function, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233). Note that in figure 9, if the generation channel is the innermost lumen surrounding the electrode and the ion source is the outermost lumen, the claim limitation is satisfied. It would have been obvious to make the device of Dasgupta in relative dimensions approximating the Figures in order to make the device as shown. It would have been obvious to provide an ion exchange bed in place of the ion exchange screens as taught and to provide an uncharged screen to support the ion exchange resin as was known in the art, e.g., as an extended frit structure.

16. Claims 59, 61-63, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dasgupta.

17. The teachings of Dasgupta are given above. A pump 22 is shown coupled to the outlet of the generation cell.

18. Dasgupta fails to teach a pump upstream of the generation chamber.

19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the pump upstream of the electrolytic cell in order to

Art Unit: 1743

provide the flow pattern shown in an art recognized alternative. Placing a pump at any point in the flow line results in pushing or drawing the fluid through the line.

20. Claims 54, 58, 66, 67, 70, 71 are allowed.

21. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach or suggest the instant methods of generating an acid or base in an electrolytic cell with an ion exchange barrier in which the barrier is at least 1mm thick and the pressure ratio or value is as claimed, or using an upstream pump and the pressure ratio is as claimed.

22. Applicant's arguments filed July 28, 2003 have been fully considered but they are not persuasive.

23. Applicant argues that the thicker membrane permits higher pressure operation, but the rejected claims are not so limited. Note that the declaration of Liu, indicated to accompany Exhibit A, is not of record in the instant application, i.e., did not accompany Exhibit A.

24. Applicant argues that pump placement has certain advantages as shown in the declaration of Liu accompanying Exhibit A, but the declaration is not of record.

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 1743

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

Jml  
April 19, 2004